Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) In a radio communication system, a [[A]] method of demodulating digital data utilizing a receiver unit, using M'ary QAM, comprising the steps of

detecting a complex symbol vector,

establishing within which reference symbol boundaries the detected symbol vectorD falls, the given reference symbol boundaries being associated with a complex reference vector R,

establishing quadrature components of an error vector constituting the difference between the detected vector D and the associated reference vector R, and seeking to approximate an error control signal as feed back signal in the demodulation stage,

whereby when the detected symbol vector falls within a first sector in the complex plane surrounding the imaginary axis, the first sector being delimited by at least two lines crossing origin, the first sector being symmetrical with regard to the imaginary axis, approximating the error control signal by the imaginary quadrature component of the error vector, and

whereby when the detected symbol vector falls within a second sector in the complex plane surrounding the real axis, the second sector being delimited by at least two lines crossing origin, the second sector being symmetrical with regard to the real axis, approximating the error control signal by the real quadrature component of the error vector.

2. (Previously Presented) The method according to claim 1, whereby the first sector is delimited by the area ¦D_Q¦ > ¦D_I|
and the second sector is delimited by the area ¦D_Q¦ <¦D_I|.

3. (Previously Presented) The method according to claim 1, whereby the first sector is delimited by the area $|D\_Q|>2\cdot|D\_I|$,

the second sector is delimited by the area $|D\_Q|<½\cdot|D\_I|$, and

when the detected symbol vector belongs neither to the first sector nor to the second sector, approximating the error control signal by the mean value of the real quadrature component and the imaginary quadrature component.

4. (Previously Presented) The method according to claim 1, further comprising the steps of

using a weighted error signal, the error signal being a function of the error control signal as a feed-back signal in the demodulation stage, whereby

the weighted error signal

- approaches zero for the error control signal approaching zero,
- attains a positive value for positive values of the error control signal close to zero and attains a negative value for negative values close to zero,
- approaches zero when the error signal vector approaches the symbol boundaries of the detected symbol.

5. (Previously Presented) The method according to claim 4, wherein if the error signal vector exceeds the symbol boundaries, the weighted error signal attains a reduced value or a zero value.

6. (Previously Presented) The method according to claim 5, wherein the error control signal is reduced according to

$$WE = E'(1 - \frac{2W}{T})$$

where E' corresponds to the deviated control error and T corresponds to the symbol boundary size and where W = Max {abs(E_I) ; abs(E_Q)}.

7. (Previously Presented) The method according to claim 4, wherein no weighting is performed for outer corner portions of the M'ary QAM constellation.

8. (Previously Presented) The method according to claim 7, wherein when the detected signal falls outside the symbol boundaries along the Q and I axes, the weighting function WE=0 is applied.